

ABSTRACT OF THE DISCLOSURE

In a torque sensor having a magnetic metal film with magnetic anisotropy attached to a torque transmission shaft and an exciting coil and a detector coil each installed near the magnetic metal film, there is provided a reference voltage generator that supplies an ac excitation signal whose reference voltage indicating a midpoint of the ac excitation signal is set to a voltage corresponding to a 50 % duty ratio of the ac excitation signal, to the exciting coil, such that a torque applied to the torque transmission shaft is detected based on an output of the detector coil, thereby achieving improved torque detection accuracy by enabling generation of an excitation signal of large amplitude that is free of upper-lower imbalance relative to the reference voltage as the midpoint and accurate detection of the magnitude and accuracy of detection waveform amplitude. In addition, the excitation signal is generated based on clock frequency of a microcomputer that detects the applied torque, thereby achieving improved torque detection accuracy by enabling generation of an excitation signal of large amplitude that is free of upper-lower imbalance relative to the reference voltage as the midpoint and accurate detection of the magnitude and accuracy of detection waveform amplitude.